

WHAT IS CLAIMED IS:

1. A method for scheduling a packet, comprising the steps of:
receiving a packet;
identifying a flow for said packet;
classifying said packet based on said identified flow; and
buffering said packet in one of a plurality of queues based on said classification of said packet.
2. The method of claim 1, wherein identifying said flow for said packet comprises identifying a source address of said packet.
3. The method of claim 1, wherein identifying said flow for said packet comprises identifying a destination address of said packet.
4. The method of claim 1, wherein classifying said packet comprises:
calculating a size of said packet; and
calculating an allocated credit assigned to said flow based upon said size of said packet.
5. The method of claim 4, wherein calculating said allocated credit is based upon a bandwidth assigned to said flow.

6. The method of claim 1, wherein buffering said packet in one of said plurality of queues based on said classification of said packet comprises:

arranging said plurality of queues in a hierarchical order;

assigning a priority to said packet based on said hierarchical order;

and

buffering said packet in one of said queues based on said assigned priority.

7. The method of claim 6, wherein assigning a priority to said packet based on said hierarchical order comprises:

determining a size of said packet; and

calculating a transmission delay based on said size of said packet and said hierarchical order.

8. The method of claim 1, further comprising:

identifying at least one of said plurality of queues having buffered packets;

determining a first queue of said plurality of queues having buffered packets;

calculating a credit accumulated for one of said buffered packets in the first queue; and

outputting said one buffered packet based upon said accumulated credit.

9. The method of claim 8, further comprising:
 - determining a hierarchical order for said queues having buffered packets; and
 - determining a next queue having buffered packets based on said hierarchical order.
10. A system for scheduling a packet, comprising:
 - an input to receive a plurality of packet;
 - an arrival module to identify a flow for each of said plurality of packets;
 - a classifier to assign each of said plurality of packets to one of a plurality of queues based on said identified flow;
 - a server for selecting one of said plurality of queues based on a hierarchical order; and
 - an output for outputting a packet from said selected queue.
11. The system of claim 10, further comprising:
 - a memory to store a service list of flows identified for each of said plurality of packets.

12. An apparatus for scheduling a packet, comprising:

- means for receiving a packet;
- means for identifying a flow for said packet;
- means for classifying said packet based on said identified flow; and
- means for buffering said packet in one of a plurality of queues based on said classification of said packet.

13. A computer-readable medium for configuring a processor to execute a method for scheduling a packet, said method comprising the steps of:

- receiving a packet;
- identifying a flow for said packet;
- classifying said packet based on said identified flow; and
- buffering said packet in one of a plurality of queues based on said classification of said packet.